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ENVIRONMENTAL PROTECTION DIVISION

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NARRATIVE

TO: Jeng-Hon Su

FROM: Ginger Payment

DATE: March 29, 2023

Facility Name:	**Flexstar Packaging, Inc.**
AIRS No.:	313-00072
Location:	Dalton, GA (Whitfield County)
Application #:	28668
Date of Application:	December 20, 2022

Background Information

Flexstar Packaging, Inc. (hereinafter "facility") is an existing flexographic printing facility located at 1902 Kimberly Park Drive, Dalton (Whitfield County). This is a synthetic minor source with a VOC emission limit of 100 tpy and HAP emission limits of 25 tpy for combined HAP emissions and 10 tpy for any individual HAP emission. Permit No. 2759-313-0072-S-07-0 was issued on June 10, 2008 for the name change from Overwraps Packaging, Inc. to Flexstar Packaging, Inc. This facility has also operated under the names Cross Plains Packaging and Finewrap-USA prior to becoming Overwrap Packaging, Inc. Permit Amendment No. 2759-313-0072-S-07-1 was issued on October 18, 2010 for the construction and operation of a new 4-color flexographic printing press (Source Code P3) and for the revision of permit conditions to allow flexibility in the usage of the catalytic oxidizer. Permit Amendment No. 2759-313-0072-S-07-2 was issued on April 18, 2019 for the construction and operation of two new 8-color flexographic presses (P4 and P5) with associated dryers, replacement of the catalytic oxidizer (IO1) with a regenerative thermal oxidizer (RTO1) and removal of Tacky Press (P2) with associated dryers.

The packaging printing presses are equipped with between color and overhead dryers. The presses use solvents and inks applied on the flexible packaging materials.

Purpose of Application

Application No. 28668 was submitted on December 20, 2022 and was received on December 30, 2022 to request the removal of Press P5 and Catalytic Oxidizer I01, addition of Press P2, use of RTO1 to control all presses and allowing the flexible use of RTO. The Division requested additional information regarding the dryers on January 3, 2023 and the information was provided on March 8, 2023.

Due to the increase in the potential emissions due to Press P2, a public advisory (PA0123-1) was issued on January 2, 2023 and expired on February 3, 2023.

Updated Equipment List

Emission Units			Associated Control Devices	
Source Code	**Description**	**Installation Date**	**Source Code**	**Description**
P1	F&K Press (8-Color Flexographic Printing Press) (Between Color Dryer – 1.2 MMBtu/hr) (Overhead Dryer – 1.2 MMBtu/hr)	2003	RTO1	Regenerative Thermal Oxidizer
P2	Tacky Press (8-Color Flexographic Printing Press) (Between Color Dryer – 0.64 MMBtu/hr) (Overhead Dryer - 0.64 MMBtu/hr)	2003	RTO1	Regenerative Thermal Oxidizer
P3	Wolverine Press (4-Color Flexographic Printing Press) (Between Color Dryer – 1.2 MMBtu/hr) (Overhead Dryer – 1.6 MMBtu/hr)	2010	RTO1	Regenerative Thermal Oxidizer
P4	Carint Press 1 (8-color Flexographic Printing Press) (Between Color Dryer – 2 MMBtu/hr) (Overhead Dryer – 2 MMBtu/hr)	2019	RTO1	Regenerative Thermal Oxidizer
C1	Corona Treater	2003	--	--
B1 - B15	Fifteen Bag Machines	2003	--	--
PW	Parts Washer (closed)	2003	--	--

Press P2 will be added back into operation with this permit. The press has previously been installed but removed from operation with Permit Amendment No. 2759-313-0072-S-07-2.

The between color dryers and overhead dryers for the presses are fired with natural gas.

Emissions Summary

Emissions from combustion were calculated using AP-42 emission factors for natural gas and are based on the maximum heat input capacity for each dryer. Emissions from the existing presses were calculated based on actual ink and solvent usage for August 2021 through July 2022. The emissions from presses shown in the following table are uncontrolled emissions. Potential emissions from the presses are based on actual emissions.

The change in emissions in the following table are due to the permitting of Press P2. The emissions from combustion were calculated by the Division using AP-42 emission factors and the maximum heat input capacity for two dryers for Press P2. The estimated VOC emissions are based on Application No. 19781 which estimated the VOC emissions from Press P1 and P2 to be 84.06 tpy combined. As a result, the VOC emissions from Press P2 were estimated to be approximately 42 tpy.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	**After Mod.**	**Emissions Change**	**Before Mod.**	**After Mod.**	**Emissions Change**
$PM/PM_{10}/PM_{2.5}$	0.46	0.50	0.04	<0.46	<0.50	0.04
NOx	6.09	6.64	0.55	<6.09	<6.64	0.55

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	After Mod.	Emissions Change	Before Mod.	After Mod.	Emissions Change
SO_2	0.037	0.04	0.003	<0.037	<0.04	0.003
CO	5.11	5.57	0.46	<5.11	<5.57	0.46
VOC	<100	<100	0	<100	<100	0
Max. Individual HAP	<10	<10	0	0.19	0.19	0
Total HAP	<25	<25	0	0.35	0.35	0

Regulatory Applicability

VOC emissions will continue to be limited to 100 tpy in order to avoid major source requirements. HAP emissions will continue to be limited to 25/10 tpy in order to avoid MACT requirements.

The facility will continue to be subject to Georgia Rule (b) – *Visible Emissions* and Georgia Rule (e) – *Particulate Emission from Manufacturing Processes*. A fuel limitation of natural gas will allow the facility to comply with Georgia Rule (g) – *Sulfur Dioxide*.

The facility will not be subject to Georgia Rule (mm) - *VOC emissions from Graphic Arts Systems* because the facility has a 100 tpy limit for VOC emissions.

The facility will not be subject to 40CFR60 Subpart QQ - *Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing* because the facility only uses flexographic presses.

Permit Conditions

- Condition 2.1 limits the VOC emissions to less than 100 tpy from the facility in order for the facility to avoid major source requirements.
- Condition 2.2 limits the HAP emissions to less than 25/10 tpy for MACT avoidance.
- Condition 2.3 subjects the facility to Georgia Rule (b).
- Condition 2.4 subjects the facility to Georgia Rule (e).
- Condition 2.5 limits the fuel used at the facility to natural gas for compliance with Georgia Rule (g).
- Condition 4.1 requires the facility to perform routine maintenance on all air pollution control equipment.
- Condition 4.2 requires the facility to operate the RTO at the specified temperatures and allows operation as needed in order to meet the emission limits.
- Condition 4.3 requires a log for the operations of the RTO.
- Condition 5.1 requires the facility to continuously monitor and record RTO combustion zone temperature.
- Condition 5.2 requires that the facility monitor either the pressure drop across the enclosure for each press or NDO face velocity for each press. This is to ensure permanent total enclosure so that the capture efficiency is 100%.

- Condition 6.2 requires initial VOC destruction testing on the RTO within 120 days after the initial startup of RTO1 that takes place after the issuance of this Permit, with follow-up testing every 60 months. The facility must establish the minimum RTO combustion zone temperature using data recorded during the tests.
- Condition 6.3 requires verification that the total enclosure housing each press is a Permanent Total Enclosure (PTE).
- Condition 7.1 requires the facility to record periods when the RTO is not in operation and 3-hr rolling average RTO combustion zone average temperature data.
- Condition 7.2 requires the facility to maintain records of all materials containing VOC and natural gas consumption records.
- Condition 7.3 provides guidance for calculating VOC emissions from natural gas usage.
- Condition 7.4 provides guidance for calculating VOC emissions from the printing operations.
- Condition 7.5 requires the calculation of total monthly VOC emissions and a notification if any one month exceeds the stated limit.
- Condition 7.6 requires the calculation of 12 month rolling total VOC emissions and a notification if any 12-month rolling total exceeds the stated limit.
- Condition 7.7 requires the facility to maintain records of all materials containing HAP emissions and natural gas consumption records.
- Condition 7.8 provides guidance for calculating HAP emissions from natural gas usage.
- Condition 7.9 provides guidance for calculating HAP emissions from the printing operations.
- Condition 7.10 requires the calculation of total monthly individual and total HAP emissions and a notification if any one month exceeds the stated limit.
- Condition 7.11 requires the calculation of 12 month rolling total individual and total HAP emissions and a notification if any 12-month rolling total exceeds the stated limit.
- Condition 8.2 requires the facility to pay annual fees.
- Condition 8.3 revokes the previous permit and amendments.

Toxic Impact Assessment

The HAP/TAP emission rates were evaluated to the MER (minimum emission rate) located in Appendix A for the Georgia Air Toxics Guidelines. A summary of the MER for the pollutants is shown in the table below. The emission rates were below the MER; therefore, a toxic impact assessment was not necessary.

Pollutant	CAS	Emission Rate (lb/yr)	MER (lb/yr)	Modeling Required?
Methanol	67561	55.95	30,126.73	No
Ethylene Glycol	111762	387.66	3,163,290	No
Benzene	71432	0.28	31.63	No
Toluene	108883	0.45	1,216,650	No
Formaldehyde	50000	9.95	267.00	No
Naphthalene	91203	0.08	729.99	No
Dichlorobenzene	95501	0.16	17,375.19	No
Hexane	110543	238.88	170,331	No
Arsenic	7440382	0.03	0.057	No
Cadmium	7440439	0.15	1.35	No
Chromium	7440473	0.19	0.02	No

Pollutant	CAS	Emission Rate (lb/yr)	MER (lb/yr)	Modeling Required?
Cobalt	7440484	0.01	11.68	No
Manganese	7439965	0.05	12.17	No
Mercury	7439976	0.03	73	No
Nickel	7440020	0.28	38.64	No
Selenium	7782492	0.00	23.36	No

Summary & Recommendations

I recommend issuance of Permit No. 2759-313-0072-S-08-0 to Flexstar Packaging, Inc. which is located at 1902 Kimberly Park Drive, Dalton, Georgia. This is an existing flexographic printing facility. The permit allows for the operation of a graphic arts facility and for the removal of Press P5 and Catalytic Oxidizer I01, addition of Press P2, use of RTO1 to control all presses and allowing the flexible use of RTO1. A public advisory was issued and expired February 3, 2023. The Mountain District – Cartersville Office will continue to be responsible for compliance of this facility. The platform was reviewed for accuracy and updated with the appropriate applicable rules.